CONTINUITY SHEET FOR REEL # 8

ELEMENTS OF THE AUTOMOBILE



M T Part 8

M T The Bray Pictures Corporation
presents
"ELEMENTS OF THE AUTOMOBILE"
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M T Produced for
The Education
And Recreation Branch
General Staff
under the supervision
of the
Motor Transport Division
Quartermasters Corps
United States Army.

M S Ignition (Continued)

Sub The spark must occur at a certain definite time.

Sc 1 One-cylinder engine. Intake. Pause. Compression. Pause. Explosion. Pause. Exhaust. Pause.

Sub The time at which the spark is required is just at the end of the compression stroke of the piston.

Sc 2 Diagram view of one-cylinder engine, battery, high and low tension wires. Pointer closes switch. Pause. Action of engine with gases.

Sub NOW!

Sc 3 Pointer opens switch. Spark occurs. Pointer closes switch. Action repeated several times.

Sub It has been shown that the spark is created by the breaking of the primary circuit.

Sc 4 Diagrammatic view of system( no engine). Pointer opens and closes switch several times.

Sub It has been shown that the spark must occur at a certain time, relative to the movement of the piston.

Sc 5 Diagrammatic view of system with engine. Action of engine with gases. Pointer opens switch at proper time. Action repeated several times.

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| Sub | A mechanical circuit breaker is used instead of a switch. |
| Sc 6 | Switch dissolves out. Breaker dissolves in. |
| Sub | Breaker-cam. |
| Sc 7 | Close up of breaker mechanism. Pointer indicates cam. |
| Sub | Breaker-arm. |
| Sc. 8 | Close up of breaker mechanism. Pointer indicates breaker-arm. Action of brekker-cam and arm. Dissolve to diagram of system. (No engine) Pointer closes switch. No flow. Pointer indicates that breaker-arm is open. Action of cam and current. |
| Sub | The breaker-cam must be operated by the engine, if it if to produce the spark at the proper time. |
| Sub | It may be operated by the camshaft, which gives it the correct speed of revolution. |
| Sc 9 | One-cylinder engine on side frame. Pointer indicates camshaft. Action of engine with gases. Pause. Breaker mechanism dissolves in. Battery wires and switch dissolve in. Pointer closes switch. Action of engine with gases and current. |
| Sub | This is the c mplete ignition system for a one-cylinder engine. |
| Sc 10 | Complete action (high tension coil encased). |
| Sub | In a four-cylinder engine, there are four spark plugs. |
| Sc 11 | Four-cylinder engine having cylinders in section. Pointer indicates the four spark plugs. |
| Sub | The explosions in the four-cylinder engine do not occur in regular order, owing to the arrangement of the pistons. |
| Sc 12 | Action of pistons with explosions. |
| Sub | The first explosions occur at No.1 |
| Sc 13 | Section of engine. (No crankcase.) Numbers over each cylinder. Pointer indicates #1. Then explosion in that cylinder. |
| Sub | The next m y occur at either No.2 or No.3. |
| Sc 14 | Pointer indicates #3 and #2 pistons. |
| Sub | It is common practice to h ve the second explosion occur at No.3. |
| Sc 15 | Explosion at number 3. |

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| Sub | No. 4 must follow. |
| Sc 16 | Explosion at No.4. |
| Sub | Then, of course, No.2. |
| Sc 17 | Explosion at No. 2 |
| Sub | The firing order is, therefore, 1, 3, 4, 2. |
| Sc 18 | Continuous action of firing. |
| Sub | The sparks must occur in the proper order. |
| Sc 19 | Section of cylinder. Crank and flywheel encased. No action of piston. Sparks occur in order. |
| Sub | With a few exceptions the system is the same as for the one-cylinder. |
| Sc 20 | One-cylinder system complete. Engine dissolves out. Four spark plugs dissolve in. |
| Sub | In the one-cylinder, the circuit was broken only once during each revolution of the breaker-cam. |
| Sc 21 | Pointer indicates cam. Dissolve to close up of breaker mechanism. Action of cam and current. |
| Sub | This produced one spark for each revolution of the cam. |
| Sc 22 | Diagrammatic view. No engine. No spark plugs. Plain wire for high tension. Pointer closes switch. Pointer indicates gap in high tension wire. Spark plug dissolves in and out again. Pointer indicates breaker mechanism. Cam revolves. Action of current for several revolutions. |
| Sub | In the four-cylinder, the circuit must be broken four times per revolution. This is accomplished by using a four lobe cam. |
| Sc 23 | Close up of breaker mechanism. Pointer indicates single lobe cam. Four lobe cam dissolves in. Action with current. |
| Sub | This produces four spakks for each revolution of the cam. |
| Sc 24 | Close up of four lobe breaker. Dissolve to diagrammatic view. Pointer closes switch. Action of four sparks for each revolution. |
| Sub | The problem now is to distribute these sparks to the four spark plugs. |

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| Sc 25 | Four spark plugs dissolve in. High tension wire dissolves out. |
| Sub | Each plug has its own wire, terminating in a contact point. |
| Sc26 | As pointer indicates contact points a wire dissolves in connecting contact point and plug. |
| Sub | The secondary current is distributed to the contact points by a revolving brush. |
| Sc 27 | High tension wires and revolving brush dissolve in. Pointer indicates brush. |
| Sub | This device is called the distributor. |
| Sc 28 | Close up of distributor. Action of brush and current. Flash to diagrammatic view in action. |
| Sub | End of Part 8. |

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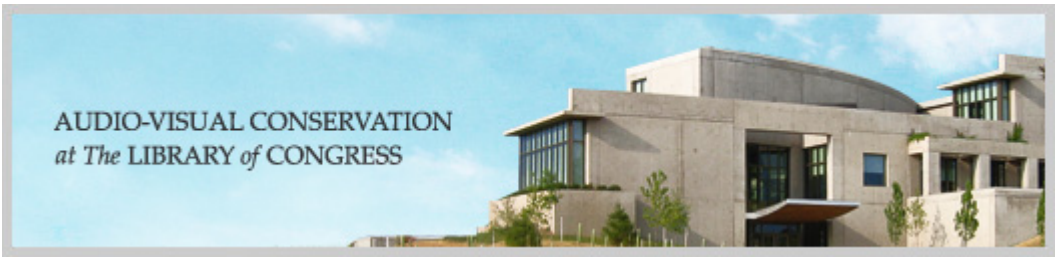


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